

I CLAIM:

1. A non-dehiscent sesame plant characterized by having greater than or equal to about 65% of total amount of sesame seed in each capsule retained in unharvested capsules subjected to the shaker test, less than or equal to 10% of total amount of sesame seed in each capsule retained in capsules after mechanical harvesting, and less than or equal to about 3% of total amount of sesame seed which is released from capsules broken during mechanical harvest.

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2. A progeny plant from said plant of claim 1.
3. Seeds produced by said plant of claim 1.
4. A progeny plant from said seeds of claim 3.

5. A non-dehiscent sesame plant characterized by having greater than or equal to about 65% of total amount of sesame seed in each capsule retained in unharvested capsules subjected to the shaker test, less than or equal to 5% of total amount of sesame seed in each capsule retained in capsules after mechanical harvesting, and less than or equal to about 7% of total amount of sesame seed which is released from capsules broken during mechanical harvesting.

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6. A progeny plant from said plant of claim 5.
7. Seeds produced by said plant of claim 5.
8. A progeny plant from said seeds of claim 7.

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- 5 9. A non-dehiscent sesame plant characterized by having greater than or equal to about 65% of total amount of sesame seed in each capsule retained in unharvested capsules subjected to the shaker test, less than or equal to 5% of total amount of sesame seed in each capsule retained in capsules after mechanical harvesting, and less than or equal to about 3% of total amount of sesame seed which is released from capsules broken during mechanical harvesting.

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10. A progeny plant from said plant of claim 9.

11. Seeds produced by said plant of claim 9.

12. A progeny plant from said seeds of claim 11.

13. A non-dehiscent sesame plant which produces a capsule having a placenta, a membrane, and seed, said capsule characterized by a capsule opening of slightly to barely open and moderate to good capsule placenta attachment.

14. The plant of claim 13, wherein said capsule is further characterized by moderate capsule constriction.

15. The plant of claim 13, wherein said capsule is further characterized by a complete capsule membrane.

16. The plant of claim 14, wherein said capsule is further characterized by a complete capsule membrane.

17. The plant of claim 13, wherein said capsule is further characterized by having a capsule split, said split extending from the top of the capsule to approximately the base of the capsule.

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18. The plant of claim 14, wherein said capsule is further characterized by having a capsule split, said split extending from the top of the capsule to approximately the base of the capsule.

19. The plant of claim 15, wherein said capsule is further characterized by having a capsule split, said split extending from the top of the capsule to approximately the base of the capsule.

20. The plant of claim 16, wherein said capsule is further characterized by having a capsule split, said split extending from the top of the capsule to approximately the base of the capsule.

21. The plant of claim 13, wherein said membrane is situated adjacent to said placenta, and wherein a capsule membrane attachment rating of moderate to little separation between the membrane and placenta is observable.

22. The plant of claim 14, wherein said membrane is situated adjacent to said placenta, and wherein a capsule membrane attachment rating of moderate to little separation between the membrane and placenta is observable.

23. The plant of claim 15, wherein said membrane is situated adjacent to said placenta, and wherein a capsule membrane attachment rating of moderate to little separation between the membrane and placenta is observable.

24. The plant of claim 16, wherein said membrane is situated adjacent to said placenta, and wherein a capsule membrane attachment rating of moderate to little separation between the membrane and placenta is observable.

25. The plant of claim 17, wherein said membrane is situated adjacent to said placenta, and wherein a capsule membrane attachment rating of moderate to little separation between the membrane and placenta is observable.

26. The plant of claim 18, wherein said membrane is situated adjacent to said placenta, and wherein a capsule membrane attachment rating of moderate to little separation between the membrane and placenta is observable.

27. The plant of claim 19, wherein said membrane is situated adjacent to said placenta, and wherein a capsule membrane attachment rating of moderate to little separation between the membrane and placenta is observable.

28. The plant of claim 20, wherein said membrane is situated adjacent to said placenta, and wherein a capsule membrane attachment rating of moderate to little separation between the membrane and placenta is observable.

29. A non-dehiscent sesame plant, wherein said plant is selected from the group consisting of Sesaco 22, Sesaco 23, Sesaco 24, 19A, and 11W, representative seed of said Sesaco 22, Sesaco 23, Sesaco 24, 19A, and 11W having been deposited under ATCC accession number PTA-1400, PTA-1401, PTA-1402, PTA-1399, and PTA-1398, respectively.

30. A progeny plant from said plant of claim 29.

31. Seeds produced by said plant of claim 29.

32. A progeny plant from said seeds of claim 31.

33. A non-dehiscent sesame plant which can be classified into the same phenotype group as a plant of a sesame line selected from the group consisting of Sesaco 22, Sesaco 23, Sesaco 24, 19A, and 11W, representative seed of said Sesaco 22, Sesaco 23, Sesaco 24, 19A, and 11W having been deposited under ATCC accession number _____, _____, _____, and _____, respectively.

34. A progeny plant from said plant of claim 33.

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35. Seeds produced by said plant of claim 33.
36. A progeny plant from said seeds of claim 35.
37. A method of breeding non-dehiscent sesame plants comprising the steps of:
- a) crossing a first parental plant having a capsule opening of slightly to barely open with a second parental plant having moderate to good capsule placenta attachment;
 - b) recovering F1 plants;
 - 5 c) selfing F1 plants to produce F2 plants; and
 - d) selecting said F2 plants having a capsule opening of slightly to barely open and having moderate to good capsule placenta attachment.
38. The method of claim 37, wherein said F2 plants express the non-dehiscent phenotype of said sesame of claim 29.
39. Seed produced from said F2 plants of claim 37.
40. A progeny plant produced from said seeds of claim 39.
41. A progeny plant produced according to the method of claim 37.
42. Seed produced from said F2 plants of claim 38.
43. A progeny plant produced from said seeds of claim 42.
44. A progeny plant produced according to the method of claim 38.

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45. A method of screening for sesame plant varieties having non-dehiscence which comprises the steps of:

- a) removing a representative number of capsules from said sesame plant;
 - b) placing said capsules in a container, said container attached to a mechanical shaker;
 - c) shaking said capsules in said container at an effective mechanical force to dislodge sesame seed from said capsules at a rate representative of the release of seed from capsules by natural weathering;
 - d) quantitating the amount of sesame seed dislodged by shaking;
 - e) quantitating the amount of sesame seed retained in said capsules after shaking;
 - f) adding the amount of sesame seed dislodged by shaking and the amount of sesame seed retained in said capsules to determine the total amount of sesame seed in capsules; and
 - g) quantitatively comparing the amount of sesame seed dislodged by shaking to the total amount of sesame seed in capsule;
- said sesame plant varieties having non-dehiscence if said sesame seed retained in said capsule after shaking is from about 65% to about 100 % of said total amount of sesame seed in capsule.

46. A sesame plant which passes the test of claim 45.